

MK Metallfolien GmbH to Produce Next-Generation Catalytic Converter Materials

In 1995–98, Krupp VDM, Emitec GmbH—the world’s largest manufacturer of metal catalytic converters—the Fraunhofer Institute for Applied Materials Research, and Wuppertal University discovered a new material – Aluchrom YHf – whose cousin, Aluchrom 7Al YHf, promises to meet the stringent new air pollution standards that will soon be imposed on automobiles in the United States and Europe. Patented by Krupp VDM, the alloy contains chromium, iron, and rare earth elements with as much as 7 percent aluminum by weight. The composition can heat up faster than any other material used in catalytic converters because of its relatively high thermal resistivity and its ability to be rolled to as thin as 0.001 inch (0.025 mm) without jeopardizing the material’s operating life. Moreover, the extreme thinness maximizes surface area, and thus catalytic efficiency, without increasing the weight or volume of the unit or its resistance to air flow. Variations on this alloy are being produced by others, but Aluchrom apparently has the greatest life.

MK Metallfolien GmbH (MKM), established in 1999 to roll ultrathin foil, is investing \$10 million in a sendzimir ZR 24C-15, a slitting line, and related equipment that will roll materials such as Aluchrom 7 Al YHf to ultrafoil thicknesses of 0.0008 inch (0.02 mm) at custom widths. After numerous trials throughout Europe, it was found that sendzimir equipment rolls the new Aluchrom alloy the most economically and with the best results. MKM’s plant in Hagen, Germany, operating as a reroller and service center, will bring product available on the market up to the specifications of companies manufacturing items such as catalytic converters. The company will offer just-in-time delivery of custom orders, with sendzimir-equipment quality and modern service standards.

The sendzimir ZR 24C-15 is being built by Intergrated Industrial Systems, Inc. (I²S) of Yalesville, Connecticut. Mechanical engineering is being done by T. Sendzimir, Inc., of Waterbury, Connecticut. The mill, which is scheduled to start operating in 2000, incorporates numerous T. Sendzimir designs, including the monobloc housing

with As-U-Roll crown control with direct-acting hydraulic cylinders, hydraulic lateral adjustment of the tapered first intermediate rolls with direct-acting hydraulic cylinders, and Pollastrelli wipers. The ZR 24C-15 has a nominal work roll diameter of 0.844 in (21.4 mm) and will roll 15-inch strip at speeds of 984 fpm (300 mpm) down to 0.0008 in (0.02 mm). It is the first mill ever designed specifically to roll Aluchrom to these specifications.

